



OpenAir™

Air damper actuators

Rotary version, AC 24 V / AC 230 V

GBB..1

GIB..1

Electronic motor driven actuators for three-position and modulating control, nominal torque 25 Nm (GBB) or 35 Nm (GIB), self-centering shaft adapter, mechanically adjustable span between 0...90°, pre-wired with 0.9 m long connection cables.

Type-specific variations with adjustable offset and span for the positioning signal, position indicator, feedback potentiometer and adjustable auxiliary switches for supplementary functions.

Remarks

This data sheet provides a brief overview of these actuators. Please refer to the Technical Basics in document Z4626en for a detailed description as well as information on safety, engineering notes, mounting and commissioning.

Use

- For damper areas up to 4 m² (GBB) or 6 m² (GIB), friction-dependent
- Suitable for modulating controllers (DC 0...10 V) or three-position controllers (e.g. for outside air dampers).
- For dampers having two actuators on the same damper shaft (tandem-mounted actuators or powerpack).
- It is recommended to switch off the power during **two-position control** when the actuator has reached the open or close position, in order to enhance life span and reduce power consumption.

Type summary

GBB./GIB..	131.1E	135.1E	136.1E	331.1E	335.1E	336.1E	161.1E	163.1E	164.1E	166.1E
Control type	Three-position control (see "Use", above)						Modulating control			
Operating voltage AC 24 V	X	X	X				X	X	X	X
Operating voltage AC 230 V				X	X	X				
Positioning signal Y DC 0...10 V							X			X
DC 0...35 V with characteristic function U _o , ΔU								X	X	
Position indicator U = DC 0...10 V							X	X	X	X
Feedback potentiometer 1 kΩ		X			X					
Auxiliary switches (two)		X	X		X	X			X	X
Rotary direction switch							X	X	X	X
Powerpack (two actuators, tandem-mounted)	X	X	X	X	X	X	X	X	X	X




Functions

Type	GBB.3..1 / GIB.3..1	GBB/GIB16..1
Control type	Three-position control (see "Use")	Modulating control
Positioning signal with adjustable characteristic function		DC 0...35 V at Offset $U_0 = 0...5$ V and Span $\Delta U = 2...30$ V
Rotary direction	Clockwise or counter-clockwise direction depends...	
	...the type of control. With no power applied, the actuator remains in the respective position.	... the setting of the rotary direction switch clockwise / counter-clockwise
Position indication: Mechanical	Rotary angle position indication by using a position indicator.	
Position indication: Electrical	The feedback potentiometer can be connected to external voltage to indicate the position.	Position indicator: Output voltage $U = DC$ 0...10 V is generated proportional to the rotary angle. U depends on the rotary direction of the switch setting.
Auxiliary switch	The switching points for auxiliary switches A and B can be set independent of each other in increments of 5° within 0° to 90°.	
Powerpack	Mounting two of the same actuator types on the same damper shaft results in a double torque (with accessories ASK73.1).	Mounting two of the same actuator types on the same damper shaft results in a double torque (with accessories ASK73.2).
Rotary angle limitation	The rotary angle of the shaft adapter can be limited mechanically at increments of 5°.	

Ordering

Note	Potentiometer cannot be added in the field . For this reason, order the type that includes the required options.
Delivery	Individual parts such as position indicator and other mounting materials for the actuator are not mounted on delivery.
Accessories, spare parts	Accessories to functionally extend the actuators are available, e.g., rotary/linear sets, auxiliary switches (1 or 2 switches) and weather protection cover; see data sheet N4699 .

Technical data

 AC 24 V supply (SELV/PELV)	Operating voltage / Frequency	AC 24 V ± 20 % / 50/60 Hz		
	Power consumption	GBB/GIB13..1	Running 7 VA, 7 W	
		GBB/GIB16..1	Running 8 VA, 8 W	
		GBB/GIB16..1	Holding 1.1 W	
 AC 230 V supply	Operating voltage / Frequency	AC 230 V ± 10 % / 50/60 Hz		
	Power consumption	GBB/GIB33..1	5 VA, 5 W	
Function data	Nominal torque	25 Nm GBB 35 Nm GIB		
	Maximum torque (blocked)	50 Nm GBB 75 Nm GIB		
	Nominal rotary angle / Max. rotary angle	90° / max. 95° ± 2°		
	Runtime for 90° rotary angle	150 s (50 Hz) / 125 s (60 Hz)		
Positioning signal for GBB/GIB16..1	Input voltage Y (wires 8-2)	DC 0...10 V		
	Max. permissible input voltage	DC 35 V		
Characteristic functions for GBB/GIB161.1, 166.1 for GBB/GIB163.1, 164.1	Input voltage Y (wires 8-2)	DC 0...35 V		
	Non-adjustable characteristic function	DC 0...10 V		
	Adjustable characteristic function	Offset U ₀	DC 0...5 V	
		Span ΔU	DC 2...30 V	
Position indicator for GBB/GIB16..1	Output voltage U (wires 9-2)	DC 0...10 V		
	Max. output current	DC ± 1 mA		
Feedback potentiometer for GBB/GIB135.1, 335.1	Change of resistance (wires P1-P2)	0...1000 Ω		
	Load	< 1 W		
 Auxiliary switches for GBB/GIB..4.1/..5.1/..6.1	Contact rating	6 A resistive, 2 A inductive		
	Voltage (no mixed operation AC 24 V / AC 230 V)	AC 24...230 V		
	Switching range for auxiliary switches	5°...90°		
	Setting increments	5°		
Connection cables	Cross-section	0.75 mm ²		
	Standard length	0.9 m		
Degree of protection of housing	Degree of protection as per EN 60 529 (note mounting instructions)	IP 54		
Protection class	Insulation class	EN 60 730		
	AC 24 V, feedback potentiometer	III		
	AC 230 V, auxiliary switch	II		
Environmental conditions	Operation / Transport	IEC 721-3-3 / IEC 721-3-2		
	Temperature	-32...+55 °C / -32...+70 °C		
	Humidity (non-condensing)	< 95% r. F. / < 95% r. F.		
Norms and directives	Product safety: Automatic electrical controls for household and similar use	EN 60 730-2-14 (Type 1)		
	Electromagnetic compatibility (Application)	For residential, commercial and industrial environments		
	EU Conformity (CE)	GBB..1:	GIB..1:	
		A5W00004366 ¹⁾	A5W00004368 ¹⁾	
RCM Conformity	GBB..1:	GIB..1:		
	A5W00004367 ¹⁾	A5W00004369 ¹⁾		
Product environmental declaration ²⁾	CE1E4626en ¹⁾			
Dimensions	Actuator W x H x D (see "Dimensions")	100 x 300 x 67.5 mm		
	Damper shaft: round	8...25.6 mm		
	Square	6...18 mm		
	Min. shaft length	20 mm		
Weight	Without packaging	2 kg		

¹⁾ The documents can be downloaded from <http://siemens.com/bt/download>

²⁾ The product environmental declaration contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

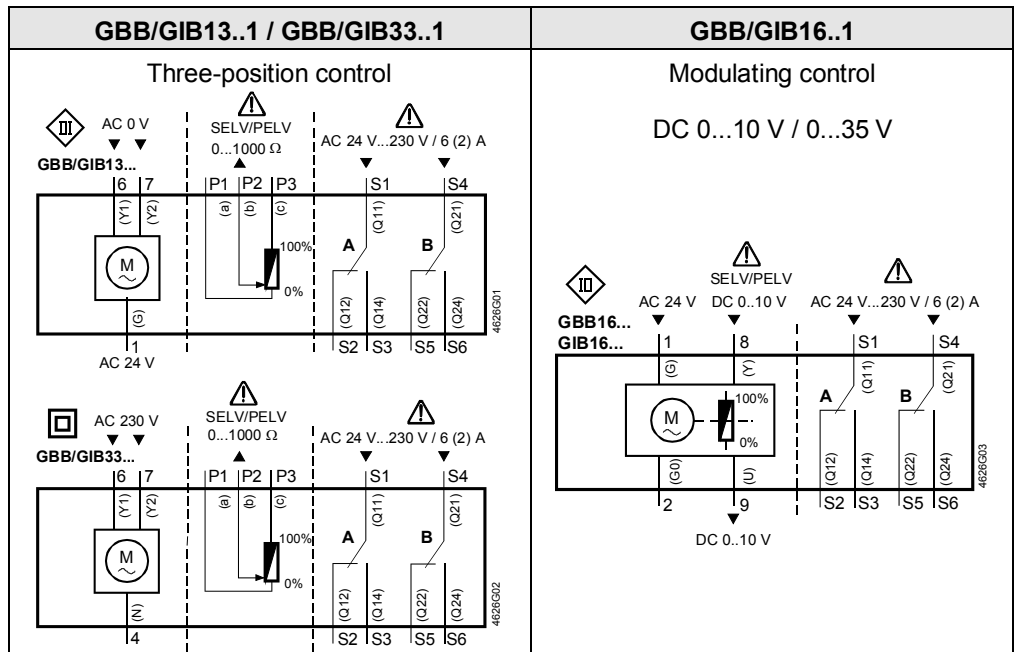
Disposal



The device is considered an electronics device for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

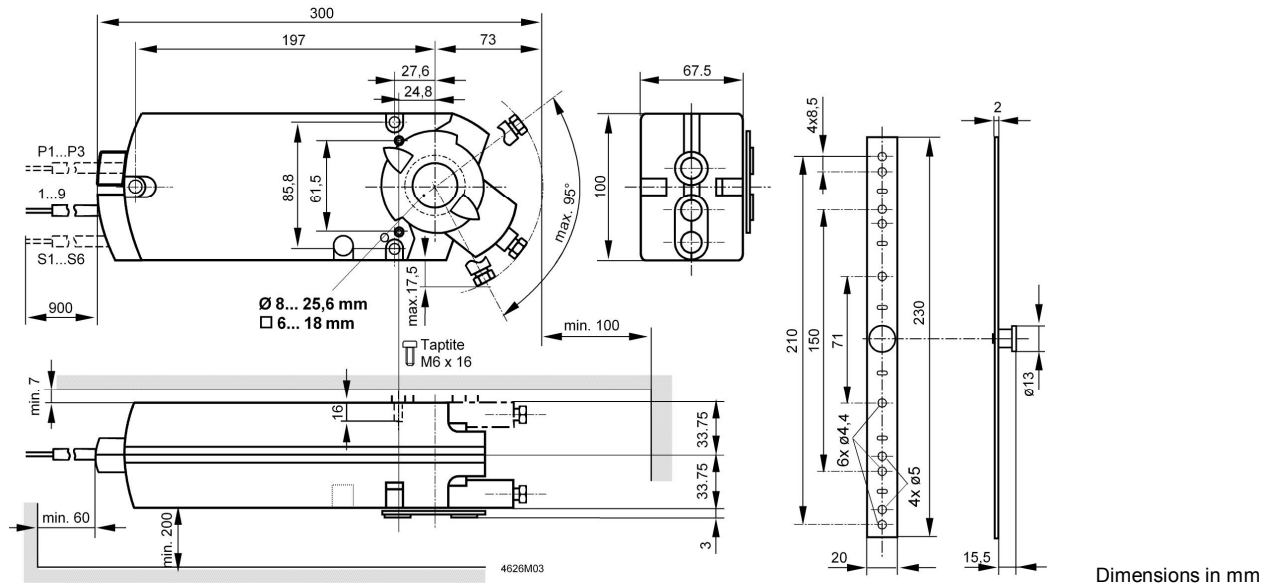
Internal diagrams



Cable labeling

Pin	Cable				Meaning	
	Code	No.	Color	Abbreviation		
Actuators AC 24 V	G	1	red	RD	System potential AC 24 V	
	G0	2	black	BK	System neutral	
	Y1	6	purple	VT	Position signal AC 0 V, clockwise	
	Y2	7	orange	OG	Position signal AC 0 V, counter-clockwise	
	Y	8	grey	GY	Position signal DC 0...10 V, 0...35 V	
	U	9	pink	PK	Position indication DC 0...10 V	
Actuators AC 230V	N	4	blue	BU	Neutral conductor	
	Y1	6	black	BK	Control signal AC 230 V, clockwise	
	Y2	7	white	WH	Control signal AC 230 V, counter-clockwise	
	Auxiliary switch	Q11	S1	grey/red	GY RD	Switch A Input
		Q12	S2	grey/blue	GY BU	Switch A Normally closed contact
		Q14	S3	grey/pink	GY PK	Switch A Normally open contact
Q21		S4	black/red	BK RD	Switch B Input	
Feedback potentiometer	Q22	S5	black/blue	BK BU	Switch B Normally closed contact	
	Q24	S6	black/pink	BK PK	Switch B Normally open contact	
Feedback potentiometer	a	P1	white/red	WH RD	Potentiometer 0...100 % (P1-P2)	
	b	P2	white/blue	WH BU	Potentiometer pick-off	
	c	P3	white/pink	WH PK	Potentiometer 100...0 % (P3-P2)	

Dimensions



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